

L 62213-65 EWT(1)/EWP(m)/LPA(s)-2/EWT(m)/SPA(sp)-2/EPF(n)-2/ENG(v)/EPA(h)-2  
T-2/EWP(t)/EWP(b)/EWA(m)-2 Pd-1/Pa-5/Pa-4/Ft-7/Pi-4/Pu-4 IJP(c) JD/11/11  
ACCESSION NR: AP5014162 538.4 : 621.313.333

AUTHOR: Okhremenko, N. M.

TITLE: Investigation of spatial distribution of magnetic fields and electromagnetic effects in induction pumps

SOURCE: Magnitnaya gidrodinamika, no. 1, 1965, pp. 109

TOPIC TAGS: electromagnetic field, magnetohydrodynamics, liquid metal pump

ABSTRACT: The extension of analytical studies of spatial distribution of magnetic fields in a flat linear induction pump with liquid metal is presented. Finite widths (and infinite lengths) of the inductor coils and the channels, the presence of metallic walls and heat insulation are taken into account. The system of Maxwell's equations is solved for three regions shown in fig. 1 of the paper. The system efficiency is given in terms of the coefficient of demagnetization (ratio of inductor coil currents with load and without load, or ratio of resulting magnetic fields). The coefficient values for a set of pole separations are presented graphically. The analytic relations permit accurate calculations.

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ACCESSION NR: AP5014187

performance of the device considering both transverse and thickness fringe and accounting for reaction of secondary currents. These calculations are confirmed by the experimental results which will be published. Orig. art. has formulas, 6 figures.

ASSOCIATION: none

SUBMITTED: 30Jun64

NO REF SOV: 006

ENCL: 01

SUB CODE: M. S. F.

OTHER: 00C

Card 2/3

L 62213-65

ACCESSION NR: AP5014162

ENCLOSURE: 01

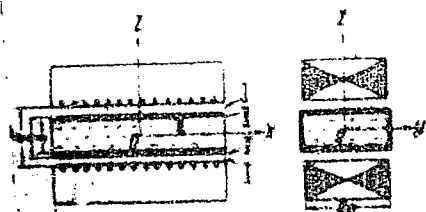


Fig. 1. Diagram of the linear induction pump.

I--thermal insulation (gap); II--channel walls liquid metal

*lls*  
Card 3/3

VASIL'YEV, A.V.; GANTSEVA, L.M.; FOMINA, L.G.

Department 1 of the Scientific Studio in Molecular Biology, U.S.S.R.  
No. 2:211-222 '65. (PART 18:8)

OKHAR-MENKO. F.M.

Transverse edge effect in flat linear induction pumps. Mag. slidr.  
no.3187-95 '65. (MIRA 18-10)

L 8486 .66 EWT(1)/EPF(n)-2/T-2/ETC(m) WW/DJ  
(V)

ACC NR: 3028530

SOURCE CODE: UR/0286/65/000/020/0124/0125

AUTHORS: Liyelpeter, Ya. Ya.; Okhremenko, N. M.  
44, 54- 44, 55

CRG: none

TITLE: A cylindrical induction pump. Class 59, No. 175824

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 124-125

TOPIC TAGS: pump, induction pump, mechanical engineering

ABSTRACT: This Author Certificate presents a cylindrical induction pump consisting of an annular duct, a magnetic circuit, and a magneto with a three-phase winding (see Fig. 1). To increase the pressure efficiency, the duct of the pump carries longitudinal baffles made of an electrically conductive material.

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UDC: 621.669

L 8480-66  
ACC NR: AP5028530

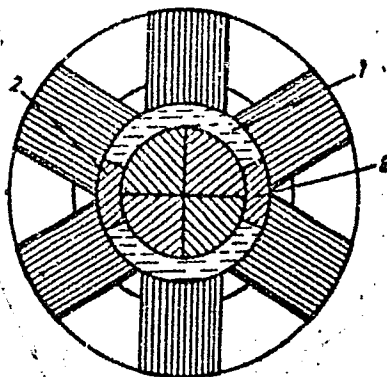


Fig. 1. 1 - Pump duct; 2 - longitudinal baffles.

Orig. art. has: 1 figure.

SUB CODE: 14, 13/ SUBM DATE: 26Sep64

*lek*  
Card 2/2

L 14232-66 EWT(d)/EWT(1)/EWT(m)/EWP(w)/EPF(n)-2/EWP(v)/T-2/EWP(t)/EWP(k)/EWP(b)/  
 ACC NR: AP5024907 EWA(h)/ETC(m)-6 JD/WW/JG/EM UR/0382/65/000/003/0087/0095

AUTHOR: Okhremenko, N.M.

ORG: None

TITLE: Transverse edge effect in flat linear induction pumps

SOURCE: Magnitnaya gidrodinamika, no. 3, 1965, 87-95

TOPIC TAGS: magnetohydrodynamic theory, magnetohydrodynamic pump, liquid metal pump

ABSTRACT: This work deals with a refinement of design theory for liquid metal magne-  
 tohydrodynamic pumps. More specifically, with the development of coefficients, asses-  
 sing the pressure attenuation of transverse electrodynamic edge effect in flat, line-  
 ar induction pumps (PLIN), Fig.1. The analysis utilizes spacial patterns of the elec-  
 tromagnetic field and expressions for the reaction coefficient of induced currents de-  
 veloped before (N.M. Okhremenko, Magnitnaya gidrodinamika, no. 1, 1965, 97). The ana-  
 lysis was based upon constant magnetic flow or constant average magnitude of the re-  
 sultant magnetic induction. This approach was considered to correspond best to the phy-  
 sical meaning and to the concepts of contemporary theory of electric machinery. The  
 analysis was made for pump configurations where the magnetic field of the pump could  
 be considered plane-parallel. Exact and approximate expressions for the electromagnetic  
 pressure were obtained for the case of simultaneous transverse and vertical surface  
 effects. Three cases were investigated: 1) for the case of an infinitely wide channel.

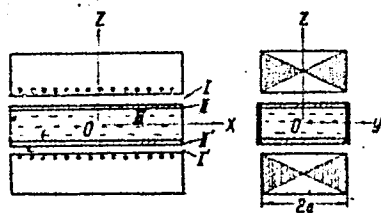
UDC 538.4.621.689

Card 1/2



L 14232-66

ACC NR: AP5024907



I - I' - heat insulation or air gap  
II - II' - metallic walls of the channel  
III - liquid metal  
Flow - along axis  $x$ ; pressures -  
- a function of  $y$  and  $z$ .

Fig. 1. Schematic of a PLIN pump.

2) for a limited width channel with a relatively thin metal layer; 3) for a limited width channel with a relatively large thickness (height) of the metal layer or stream. The results are considered necessary for the treatment of pump designs. Orig. art. has 3 figures, 25 formulas.

SUB CODE: 13,20/ SUBM DATE: 22Jun64/

ORIG REF: 010 OTH REF: 001

(18)

Card 2/2

L 16931-66 ENT(1)/ENT(m)/ENF(n)-2/T/ETC(m)-6 IJP(c) WH/DJ  
 ACC NR: AP6003196 SOURCE CODE: UR/0382/65/000/004/0003/0023

AUTHOR: Okhremenko, N. M.

ORG: none

TITLE: Induction pumps with traveling magnetic fields

SOURCE: Magnitnaya gidrodinamika, no. 4, 1965, 3-23

TOPIC TAGS: induction pump, MHD generator, electromagnetic field

ABSTRACT: Theoretical and experimental research on linear induction pumps is surveyed. Both published and unpublished data are included in the survey. The main problem in the theory of induction pumps is the mapping of electromagnetic fields in the various parts of the pump. The usual approach to this problem consists of solving idealized cases without edge effects (and hydraulic effects), edge effects being investigated separately. Problems which have been solved in this area are discussed and analyzed. The solution of the edge effects is facilitated by the considerable similarity of this problem to that of asynchronous machines. Another important set of problems is associated with the secondary effects. The importance

UDC: 538.4:621.689

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L 16931-66

ACC NR: AP6003196

of experimentally checking the theoretical computation of secondary currents and fields is pointed out. Too little work has been done on hydraulic processes under the action of traveling magnetic fields. In most cases turbulent flow of liquid metals constitutes the operating mode; however even the solution of laminar problems is very difficult. Some computation results are presented and an approach to the solution of more important aspects of this problem is suggested. It is also important to crosscheck theoretical computations and experimental measurements dealing with efficiency of pumps at various operating regimes, where mutual inductances between parts are important. The experimental work, in this area, which has produced significant contributions to the solution of the problems of design and operation of induction pumps is also reviewed and gaps in experimental data are indicated. Orig. art. has: 6 figures.

SUB CODE: 13,20/

SUBM DATE: 01Jul64/

ORIG REF: 060/

OTH REF: 007

Card 2/2 SM

OKHREMENKO, N. S.		PROBLEMS AND PROSPECTS	
CA	<p>Problems for scientific investigations in the field of wine production. N. S. Okhremenko. Vinograd. arstvo S.S.S.R. 9, No. 5, 45-9 (1949).—Brief mention is made of major problems, e.g., improvement in juice taste and technology of prepn., application of cold to the process, improvement in control methods, detn. of optimal rate of oxidation (aeration) in different stages of production of different wines, and development of new wine types.</p>		
<p>USSR-SSA METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>REPORT EXTENSION</p>		<p>REPORT SUMMARY</p>	
<p>REPORT NO.</p>		<p>REPORT DATE</p>	
<p>REPORT NO.</p>		<p>REPORT DATE</p>	

[illegible]

POPOV, K.S., kand. tekhn. nauk; GAYVORONSKAYA, Z.I.; UMANETS, V.P.;  
NILOV, V.I.; VALUYKO, G.G.; OKHREMENKO, N.S.; ZHDANOVICH,  
G.A.; DATUNASHVILI, Ye.N.; SERGINOVA, N.I.; MARCHENKO, G.S.;  
KURAKSINA, N.K.; TYURIN, S.T.; TYURINA, L.V.; KRIMCHAR, M.S.;  
RAZUVAYEV, N.I.; OGORODNIK, S.T.; MIKHAYLOV, S.M.;  
ZHILYAKOVA, O., red.; GLIKMAN, N., red.; FISENKO, A., tekhn.  
red.;

[Wine making; manual for the workers of wineries on state and  
collective farms in the Crimea] Vinodelie; rukovodstvo dlia ra-  
botnikov vinodel'cheskikh zavodov sovkhozov i kol'khozov Kryma.  
Simferopol', Krymizdat, 1960. 415 p. (MIRA 16:3)  
(Crimea--Wine and wine making)

OKHREMENKO, N.S.

Methods of reducing sugar losses during the wilting of grapes.  
Biokhim, vin. no. 6:223-23<sup>b</sup> '60. (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vinodeliya i  
vinogradarstva "Magarach".  
(Wine and wine making) (Grapes) (Sugars)

OKHRENNIKO, N.M., dotsent, kand.tekhn.nauk (Leningrad)

Electromagnetic phenomena in flat induction pumps for liquid  
metals. Elektrichestvo no.3,48-54 Nr 160. (MIRA 13:6)  
(Pumping machinery, Electric)



RENCEVICH, A.A., kand.tekhn.nauk; SHAKHTAR', P.S., inzh.; VOLOD'KO, K.P.,  
inzh.; YUSHCHENKO, A.I., inzh.; GALUSHKO, M.K., kand.tekhn.nauk;  
KUZNETSOV, B.A., kand.tekhn.nauk; KUDELYA, G.Ya., inzh.;  
MEKHEDA, M.K., inzh.; OKHRIMCHUK, O.Kh., teknik

Causes of the breaking of axles of electric mine locomotives.  
Vop. rud. transp. no.6:192-203 '62. (MIRA 15:8)

1. Dnepropetrovskiy gornyy institut (for Rengevich, Kuznetsov,  
Kudelya, Mekheda, Okhrimchuk). 2. Donetskii nauchno-issledovatel'skiy  
ugol'nyy institut (for Shakhtar', Galushko). 3. Aleksandrovskiy  
mashinostroitel'nyy zavod (for Volod'ko, Yushchenko).  
(Mine railroads) (Axles--Testing)

RENCEVICH, A.A., kand.tekhn.nauk; MEKHEDA, M.K., inzh.; DASHEVSKAYA, Ye.A.,  
inzh.; LUCHININA, R.V., inzh.; OKHRIMCHUK, O.Kh., teknik

Basic resistance to movement of mine cars in a train. Vop. rud.  
transp. no.6:318-334 '62. (MIRA 15:3)

1. Dnepropetrovskiy gornyy institut.  
(Mine railroads)

OKHRIMENKO, A.A., inzh.

The BRM-110 boring and loosening machine. Energ. 1 elektrotokh.  
prom. no.3:57 J1-S '65. (MIRA 18:9)

OKHRIMENKO, A. P.

Okhrimenko, A. P. -- "Influence of High Temperature of the Production Medium on the Organisms of Women." Kiev Order of Labor Red Banner Medical Inst. Intern. Academician A. A. Bogomolets, Kiev, 1955 (Dissertation for the Degree of Candidate of Veterinary Sciences)

SO: Knizhnaya Letopis', No. 24, Moscow, Jun 55, pp 91-164

KRYZHANOVSKIY, V.O.; OKHRIMENKO, A.P.; GONCHARUK, O.A. (Kiyev)

Organization of labor in manual cultivation of sugar beet  
crops and its improvement. Gig.truda i prof.zab. 3 no.2:51  
Mr-Ap '59. (MIRA 12:6)

1. Institut gigiyeny truda i profzabolevaniy.  
(SUGAR BEETS) (AGRICULTURE--HYGIENIC ASPECTS)

SHLEYFMAN, F.M.; OKHIMENKO, A.P.; BORODYANSKIY, N.A. (Kiyev)

Some industrial hygiene problems in the operation of electric  
steel-furnaces. Gig. truda i prof. zab. 4 no.12:12-15 D '60.  
(MIRA 15:3)

1. Kiyevskiy nauchno-issledovatel'skiy institut gigiyeny  
truda i profzabolevaniy.  
(STEEL INDUSTRY--HYGIENIC ASPECTS)

ZHIRNOVA, G.Ye.; OKHRIMENKO, A.P.

Some problems of work hygiene in the loading and unloading  
of porcelain kilns. Trudy Vor. med. inst. 47:100-101 '62  
(MIRA 16:12)

1. Kiyevskiy institut gigiyeny truda i professional'nykh za-  
bolevaniy.

MAKIMOVA, O.F.; OKHRIMENKO, A.P.; KUBYAK, O.D.

Improvement of work processes in modern steel smelting  
establishment. Vrach.delo no.3:110-112 Mr '63.. (MIRA 16:4)

1. Kiyevskiy institut gigiyeny truda i professional'nykh  
zabolevaniy.

(SMELTING--HYGIENIC ASPECTS)



SOV/27-59-2-12/30

22 (1)  
AUTHOR:

Okhrimenko, B., School Director

TITLE:

Important Tasks (Vazhnyye zadachi)

PERIODICAL:

Professional'no-tekhnicheskoye obrazovaniye, 1959, Nr 2,  
p 20 (USSR)

ABSTRACT:

Realization of the program adopted at the 21st Party Congress will require first-class engineers. The Dymar School of Agriculture Mechanization has already trained over 3,000 machine-operators for the Kiyev Oblast' and the virgin lands of Kazakhstan, but the demand is constantly increasing. The skilled tractor-operator is the most sought-after person in the kolkhoz. The kolkhozes try to make the utmost use of mechanical equipment now at their disposal, providing, concurrently the best possible maintenance and repair. However the great demand for all kinds of agricultural equipment does not abate. The Minskiy traktorny zavod (Minsk Tractor Plant) alone is now developing and will produce within the next few years 28 differently designed tractors. The author defines more precisely the new and additional duties required of tractor operators, and lists other specialists required

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Important Tasks

SOV/27-59-2-12/30

by the kolkhozes. He believes that a need exists for re-organization of schools of agricultural mechanization into vocational-technical schools. A skilled tractor operator should have at least 2 years of training. The need to develop training farms is also emphasized. The Author believes they should become a subsidiary enterprise of the school.

ASSOCIATION: Dymer'skoye uchilishche mekhanizatsii sel'skogo khozyaystva Nr 1, Kiyevskaya Oblast' (Dymer School of Agricultural Mechanization Nr 1, Kiev Oblast').

Card 2/2

I. 16369-65 ENT02, 22, 8-41 10P. 1830-83 ASD/AFWL/ASL18-1-4-1  
ACCESSION NR AP4048863AP02 83 S/0185/64/0081010-108

AUTHOR: Bilyy, M. I. (Bilyy, M. U.) OR: RIBENKO, B. A.

TITLE: Effect of temperature on the luminescence and absorption of heavy metal salt solutions. III. Interpretation of the spectra of solutions containing  $Tl^+$ ,  $Pb^{2+}$ ,  $Bi^{3+}$ ,  $Sr^{2+}$ ,  $Sb^{3+}$ , etc.

SOURCE: *Trudy Khim. Fiz. Khim. i Mekh.*, 1964, No. 10, p. 1-11

TOPIC TAGS: luminescence; absorption; heavy metal salt solutions; spectrum; absorption; luminescence; interpretation; temperature; effect

ABSTRACT: The effect of temperature on the luminescence and absorption of heavy metal salt solutions is studied. A complete interpretation of experimental results is given for the luminescence and absorption spectra of solutions of  $Tl^+$ ,  $Pb^{2+}$ ,  $Bi^{3+}$ ,  $Sr^{2+}$ ,  $Sb^{3+}$ , etc. Data obtained from investigation of certain crystal phosphors ( $NaCl$ ,  $AgI$ ) and from the photochemical reaction of these salts are used as a basis for the

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L 16369-85

ACCESSION NR. AI 444666

concluded that the observed spectra of  $Tl^+$ ,  $Pb^{2+}$  and  $Sn^{2+}$  ions were due to transitions between the energetic levels of the corresponding ions, because of interaction with the surrounding medium. The absorption and luminescence spectra of  $Tl^+$ ,  $Pb^{2+}$  and  $Sn^{2+}$  ions were interpreted as follows: maxima in the luminescence spectrum of the  $HCl-Sn^{2+}$  solution (540 nm, 635 nm) were compared with transitions  $^3P_2 \rightarrow ^1S_0$ ,  $^3P_1 \rightarrow ^1S_0$  respectively, in the free  $Sn^{2+}$  ion, while three maxima in the excitation spectrum of the red band were compared with reverse transitions. It was assumed that the band with the 440 nm maximum in the luminescence spectrum of  $HCl-Sn^{2+}$  corresponds to a transition of the type  $nd^2(n+1)s^2(n+1)p \rightarrow nd^{1+1}$  in the free  $Sn^{2+}$  ion, while the excitation function maximum of the green band (440 nm) of  $HCl-Sn^{2+}$  corresponds to reverse transitions. 4 equations

ASSOCIATION. Kyjive ag's ~~XXXXXXXXXXXXXXXXXXXX~~ I. G. Shevchenko State University)

SUBMITTED 30Sep67

PNCL 90

SUB CODE: GP, GC

NO REF SOV: 014 OTHER: 012

Card 2/2

31125  
S/185/61/006/006/002/030  
D299/D304

24,3500 (1137,1138)

AUTHORS: Bilyy, M.U., and Okhrimenko, B.A.

TITLE: Absorption and luminescence of halide solutions of thallium and tin ions of different valence

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 6, 1961, 730 - 733

TEXT: Experimental data, relating to the spectral characteristics of  $\text{Sn}^{2+}$ ,  $\text{Tl}^{+}$  and  $\text{Pb}^{2+}$ -ions in crystals and solutions, are analyzed to ascertain the electron-transfer mechanism. Although the spectral characteristics of these ions exhibit many similarities in the crystals and in the solutions (such as similar structure of absorption bands, same position of maximum), there are other experimental facts which cannot be explained by one and the same mechanism of electron transfer. The maxima of the absorption spectra of  $\text{Tl}^{+}$  and  $\text{Tl}^{3+}$ -ions in solutions with residual  $\text{Cl}^{-}$  ions, practically coincide; luminescence of  $\text{Tl}^{3+}$  could not be observed. The absorption spectra

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D299/D304

Absorption and luminescence of ...

of  $\text{Sn}^{2+}$  ions are more complex than those of  $\text{Tl}$ -ions, being composed of 3 smaller maxima (227, 262 and 284 m $\mu$ ) and one "principal" maximum (220 m $\mu$ ); on loosing 2 s-electrons, the  $\text{Sn}^{2+}$ -ion is transformed into a  $\text{Sn}^{4+}$ -ion, giving rise to luminescence (at room temperature). It is noted that in all the cases, the concentration of  $\text{Sn}^{2+}$ ,  $\text{Sn}^{4+}$ ,  $\text{Tl}^{+}$  and  $\text{Tl}^{3+}$ -ions was  $10^{-4}$  -  $10^{-3}$  mol/l, and that of the halide ions -- 7.5 mol/l. Further, the similarities and differences in the behavior of  $\text{Sn}^{2+}$  and  $\text{Tl}^{+}$ -ions are analyzed. The formation of  $\text{TlCl}$  and  $\text{PbCl}$ -complexes was observed. In the case of  $\text{Tl}^{+}$  and  $\text{Pb}^{2+}$  chloric solutions, it was found that a change in temperatures leads to a shift in luminescence spectra without a shift in the absorption spectra, whereas a change in  $\text{Cl}^{+}$ -ion concentration at constant temperature, leads to a considerable shift in the absorption spectra without affecting the luminescence spectra. The described experimental facts lead to the conclusion that different electrons take part in the absorption- and luminescence processes. It can be assumed that the absorption of  $\text{Tl}^{3+}$  and  $\text{Sn}^{4+}$  ions is due to transfer of d-electrons. The fact that the red luminescence-band of  $\text{Sn}^{4+}$  ions has

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Absorption and luminescence of ...

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D299/D304

the same wavelength as that of the  $\text{Sn}^{2+}$ -ions, shows that the "principal" absorption-maximum of the  $\text{Sn}^{2+}$ -ion, as well as the  $\text{Sn}^{4+}$  absorption-band, are due to excitation by d-electrons. The same considerations apply to  $\text{Tl}^+$  and  $\text{Tl}^{3+}$  ions. With such an interpretation, the luminescence of the  $\text{Tl}^+$  ion and the green band of the  $\text{Sn}^{2+}$  ion can be considered as migration of s-electrons to the sites vacated by d-electrons, which became excited by absorption of photons. The absorption maxima which appear as a result of the transformation of  $\text{Sn}^{2+}$  ions into  $\text{Sn}^{4+}$  ions, are probably due to the transfer of s-electrons, from the fundamental  $^1\text{S}_0$  level to excited  $^3\text{P}_{0,1,2}$ -levels. The inverse transition  $^3\text{P}_{0,1,2} \rightarrow ^1\text{S}_0$  is responsible for the red luminescence-band of the  $\text{Sn}^{2+}$  ion. There are 3 figures and 14 references: 11 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows: P.E. Williams, Phys. Rev., 80, 306, 1950.

ASSOCIATION: Kyivskyy derzhuniversytet im. T.H. Shevchenka (Kyiv State University im. T.H. Shevchenko) X

Card 3/3

S/048/61/025/003/003/047  
B104/B203

AUTHORS: Belyy, M. U., Okhrimenko, B. A., and Rud'ko, B. F.

TITLE: Recombination luminescence of  $\text{Sn}^{4+}$  in aqueous solution of LiCl and HCl at low temperatures

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 3, 1961, 426-428

TEXT: This paper was read at the 9th Conference on Luminescence (Crystal Phosphors) in Kiev, June 20-25, 1960. It is known that the optical characteristics of alkali-halide crystal phosphors and certain concentrated solutions have much in common: the absorption spectra are in practical agreement, and the luminescence spectra have also certain correspondences. Hence, the authors conclude that a study of concentrated halide solutions containing heavy metal ions might help to clarify absorption and luminescence mechanisms. It has been found earlier that a red luminescent band could be observed in a solution of  $\text{Sn}^{4+}$  in LiCl(HCl) on reduction of temperature. The luminescence spectrum of this solution at the temperature of liquid oxygen consists of a blue band ( $\lambda_{\text{max}} = 440 \text{ m}\mu$ )

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and a red band (Curve 3 of the figure). The present paper deals with the origin of this band. It was found to have three maxima: 585 mμ, 605 mμ, and 635 mμ. Further, it was stated that these two bands were excited in different parts of the absorption spectrum: the blue one at the absorption maximum of 226 mμ, and the red one in the region of two distinct maxima at 262 mμ and 276 mμ. Fig. 1 shows the absorption and luminescence spectra of two solutions. It was found that the absorption spectra of these solutions did not shift on reduction of temperature, only undergoing a slight contraction and elevation of the bands. It was further shown that the absorption spectra of the two solutions had a distinct maximum at 226 mμ, and two less distinct maxima at 260 mμ and 276 mμ. The luminescence spectrum of the solution  $\text{Sn}^{4+} + \text{LiCl}(\text{HCl})$  had only a red band. It is assumed that the longwave absorption maximum of the solution  $\text{Sn}^{++} + \text{LiCl}(\text{HCl})$  is caused by the transitions  $^1\text{S}_0 \rightarrow ^3\text{P}_{0,1,2}$ . This, however, also clarifies the triplet structure of the red luminescent band of  $\text{Sn}^{++}$ . The similar structure of the red luminescent band of  $\text{Sr}^{4+}$  solutions is explained by the same transitions in the  $\text{Sn}^{4+}$  ion as above,

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since they also give a red luminescent band of the  $\text{Sn}^{4+}$  ion. This interpretation is confirmed by the agreement of maxima of the excitation spectrum calculated from formula

$$I_{\text{lum}} = I_0 \frac{\alpha C_x C_0}{K_x C_x + K_0 C_0} [1 - e^{-(K_x C_x + K_0 C_0)d}], \quad (1)$$

with the ones found experimentally. Here,  $I_{\text{lum}}$  and  $I_0$  are the intensity of luminescence and the intensity of the exciting light,  $\alpha$  is the probability of a recombination of an electron and of an  $\text{Sn}^{4+}$  ion,  $K_x$ ,  $K_0$ ,  $C_x$ , and  $C_0$  are absorption coefficients and concentrations of the  $\text{Cl}^-$  and  $\text{Sn}^{4+}$  ions, and  $d$  is the thickness of the absorbing layer. It was shown that  $I_{\text{lum}}$  reached a maximum at  $K_0/K_x = C_x^2/C_0^2$ . In a subsequent discussion, Ch. B. Lushchik dealt with electron transitions causing absorption in activated crystals. There are 1 figure and 2 Soviet-bloc references.

ASSOCIATION: Kafedra optiki Kiyevskogo Gos. universiteta im. T. G. Shevchenko  
(Department of Optics of the Kiyev State University imeni T. G. Shevchenko)

Card 3/4

L 16861-63

SWP 1-1000/1-1000S AFFTC/ASD JD/JG

ACCESSION NR: AP3006312

S/0058/63/001/001/001

SOURCE: RZh. Fizika Akad. 1963

AUTHOR: Bily'y, M. M. Okhrimenko, B. A.

TITLE: Photochemical transformations in halide solutions of pentavalent thallium 27

CITED SOURCE: Visnyk Ky'yivs'k. un-tu, no. 5. 1962. ser. astron. fiz. ta khimiyi, vy\*p. 1, 15-21

TOPIC TAGS: photochemistry, thallium, photochemical transformation, halide solution, luminescence loss

TRANSLATION: It is shown that halide solutions of Tl gradually lose their luminescence ability under the influence of ultraviolet light. It is established by chemical analysis that as a result of irradiation

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L 16861-03

ACCESSION NR: ARJ000010

tion the  $Tl^+$  is transformed into  $Tl^{3+}$ , the solutions of which luminesce, although the maxima of the absorption spectra of  $Tl^{3+}$ , while differing in height, coincide in the wavelength. It is established that photo-oxidation of  $Tl^+$  to  $Tl^{3+}$  occurs only if the ions  $Hal^-$  and  $H^+$  are simultaneously present in the solution. In the absence of at least one of the components ( $Hal^-$  or  $H^+$ ), no photochemical reaction is observed. With decreasing concentration of  $Hal^-$  or  $H^+$  (or both simultaneously), the rate of photo-oxidation decreases. Such a behavior has made it possible to interpret the mechanism of the observed reaction in the following manner:  $Hal^- + H^+ + h\nu \rightarrow Hal^0 + H^0$ ;  $Tl^+ + Hal^0 \rightarrow Tl^{2+} + Hal^-$ ;  $Tl^{2+} + H^0 \rightarrow Tl^{3+} + H^+$ . On the basis of the proposed mechanism, calculation is carried out for the course of the photochemical reaction in

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L 16861-63

ACCESSION NR: AR3006313

time. A comparison of the calculated curves with experiment has given a satisfactory result. A comparison of the concentration dependences of the photochemical processes in the  $\text{Sn}^{2+}$  and  $\text{Sb}^{3+}$  with the investigated process for  $\text{Tl}^+$  shows that the processes are perfectly analogous. This makes it possible to extend the proposed mechanism to the ions  $\text{Sn}^{2+}$  and  $\text{Sb}^{3+}$ .

DATE ACQ: 15Aug63

SUB CODE: PH

ENCL: 1

Card 3/3

BELYY, M.U.; ~~OKHRIDENKO~~, B.A.

Structural characteristics of the spectra of luminescent  
electrolyte solutions. Izv. AN SSSR Ser. fiz. 27 no.5:666-669  
Ky '63. (MIRA 16:6)

1. Kafedra optiki Kiyevskogo gosudarstvennogo universiteta  
imeni T.G. Shevchenko.  
(Electrolyte solutions—Spectra)

L 41498-65 EWT(1)/EWT(m)/EPF(c)/EPF(n)-2/EPF(t)/EWP(b) Pr-4/P1-4/P -  
 IJF(g) JD  
 ACCESSION NR: AP4048862 S/0185/64/009/010/1059/1057

AUTHOR: Bilyy, M. U., Bilyy, M. U., Okhrimenko, B. A.

TITLE: Effect of temperature on the luminescence and absorption spectra of heavy metal salt solutions. II. Investigation of tin salt solutions

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 9, no. 10, 1964, 1059-1067

TOPIC TAGS: heavy metal salt, thallium halide, stannous halide, stannous lead halide, luminescence spectrum, absorption spectrum, luminescence excitation function

ABSTRACT: The special characteristics of  $H_2O + Hal^- + Me^{n+}$  type solutions ( $Hal^- = Cl^-, Br^-, Me^{n+} = Sn^{2+}, Sn^{4+}, Pb^{2+}, Ti^{4+}$ ) were investigated in a temperature range from 20°C to -183°C. The luminescence excitation function of  $HCl-Ti^{4+}$ ,  $HBr-Ti^{4+}$ ,  $HCl-Pb^{2+}$ ,  $HBr-Pb^{2+}$  solutions were investigated. The excitation spectra of the latter two solutions have a distinct structure, differing in the short-wave and the long-wave part of the luminescence spectrum. It was concluded that the absorption and luminescence bands of the

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L 41498-65

ACCESSION NR: AP4048532

tions consist of several overlapping simple bands, with the overlapping such that its occurrence could not be established by spectral measurements. The greater overlapping apparently occurred in  $\text{HCl-Tl}^+$  and  $\text{HBr-Tl}^+$  solutions but the complexity of these bands could not be determined experimentally. The absorption and luminescence spectra and excitation functions of  $\text{HCl-Sn}^{2+}$ ,  $\text{Sn}^{2+}$  and  $\text{H}_2\text{SO}_4\text{-Sn}^{2+}$  solutions were found to follow the same rules as the containing solutions. The structural characteristics of the bands were most distinct in the  $\text{HCl-Sn}^{2+}$  solution at  $-160^\circ\text{C}$ , the luminescence spectrum consisted of 2 bands--green ( $\lambda=440\text{nm}$ ) and red ( $\lambda=600\text{ nm}$ ), the latter consisting of several overlapping bands with the maxima at 585, 605 and 625 nm. The spectral and excitation functions of  $\text{HCl-Sn}^{4+}$  and  $\text{HBr-Sn}^{4+}$  solutions were also investigated. A number of the peculiarities in these spectral characteristics were explained on the assumption that the luminescence of these solutions is of a recombination nature:  $\text{Hal}^- + h\nu \longrightarrow \text{Hal}^0 + e^-$ ,  $\text{Sn}^{4+} + e^- \longrightarrow \text{Sn}^{3+*}$ ;  $\text{Sn}^{3+*} \longrightarrow \text{Sn}^{3+} + h\nu$ ,  $\text{Sn}^{3+} + \text{Hal}^0 \longrightarrow \text{Sn}^{4+} + \text{Hal}^-$ . The excitation functions were calculated on the basis of this proposed mechanism and were in satisfactory agreement with the experimental excitation functions, corroborating the proposed mechanism.

\*Card 2/3



L 41498-65

ACCESSION NR: AP4048862

Orig. art. has: 5 equations and 11 figures.

ASSOCIATION: Ky\*yiivs'ky\*y derzhuniversity\*tet im. T. G. Shevchenko (Kiev  
State University)

SUBMITTED: 30Sep63

ENCL: 00

SUB CODE: GP, IC

NO REF SOV: 003

OTHER: 008

*ml*  
Card 3/3

L 43906-65 EWT(1)/EWT(m)/EWT(b)/EWT(t) PI-4 LJP(a) JD

ACCESSION NR: APS009511

S/0048/83/028/003/0301/0304

AUTHOR: Belyy, M.U.; Okhrimenko, B.A.

TITLE: Concerning the luminescence of triply charged antimony ions in frozen electrolyte solutions [Report, 12th Conference on Luminescence held in L'vov, 30 Jan-6 Feb 1984]

SOURCE: AN SSSR. Investiya. Seriya fizicheskaya, v. 29, no. 3, 1985, 381-394

TOPIC TAGS: luminescence, halide, antimony, luminescence center

ABSTRACT: The authors have investigated the luminescence of frozen aqueous solutions of HCl and HBr containing  $Sb^{3+}$  ions. Both materials were found to exhibit two luminescence bands with different excitation functions; one in the green and one in the red. The red luminescence band of HCl: $Sb^{3+}$  was found to consist of three components. These are associated with the three  $3p$  states of the free  $Sb^{3+}$  ion. The red band of HBr: $Sb^{3+}$  appeared to be simple, and the authors consider it most probable that this band is associated with the  $3p_0$  state. Objections are raised against the natural assumption that the different excitation functions of

Card 1/3

L 43906-65

ACCESSION NR: AF0069511

the two bands are due to the existence of two different kinds of luminescence centers, and it is proposed that the two bands are rather due to two different electron transitions: the red band is ascribed to excitation of the outer s electron, and the green band to raising of a lower d electron to the next higher p state. Orig. art. has: 3 figures.

ASSOCIATION: None.

SUMMARY: 00 - 1/1/65

ENCL: 00

SUB CODE: 07, 88

NR REF SOV: 010

OTHER: 001

Card 2/2 MB

BELYY, M.U. [Bilyi, M.U.]; OKHRIMENKO, B.A.

Effect of temperature on the luminescence and absorption spectra of solutions of heavy metal salts. Part 2. Study of tin salt solutions. Ukr. fiz. zhur. 9 no.10:1059-1067 0'64 (MIRA 18:1)

Effect of temperature on the luminescence and absorption spectra of solutions of heavy metal salts. Part 3: Interpretation of the spectra of solutions containing  $Tl^+$ ,  $Pb^{2+}$ ,  $Sn^{2+}$ ,  $Sn^{4+}$  ions. Ukr. fiz. zhur. 9 no.10:1068-1073 0'64 (MIRA 18:1)

1. Kiyevskiy gosudarstvennyy universitet im. Shevchenko.

BELYY, M.U.; OXENIMENKO, B.A.

Luminescence of  $Sb^{5+}$  ions in frozen electrolyte solutions. Izv.  
AN SSSR. Ser.fiz. 29 no.3:391-394 Mr '65.

(MIRA 18:4)

OKHRIMENKO, G.

OKHRIMENKO, G.

Repairing the main jet tube of the K-80 carburetor. Avt. transp.  
36 no.1:33 Ja '58. (MIRA 11:1)  
(Automobiles--Engines--Carburetors)

TSVETKOV, V.N.; SHTENNIKOVA, I.N.; RYUMTSOV, Ye.I.; OKHIMENKO, G.I.

Flow birefringence and optical anisotropy of poly- $\gamma$ -benzyl L-glutamate molecules in solution. Vysokom. soed. 7 no.6:1104-1110  
Je '65. (MIRA 18:9)

1. Institut vysokomolekulyarnykh soedyneniy AN SSSR.

OKHRIMENKO, I. P.

The creatine content of various fish muscles (Contribution to the problem of the effect of training on the creatine content of muscles). Aleksander V. Pallasin and Ivan P. Okhrimenko. *Biochem. J. (Ukraine)* 12, 449-50 (in Russian, 473-4; in English, 473-2) (1968). -- Previous work had shown that artificial training causes an increase in the creatine (Cr) content of muscles. The present paper compares the Cr content of muscles working unequally, under normal conditions. In all species studied, the muscles of the tail contain more Cr than the muscles of the back; and the muscles of more active fish contain more Cr than do the corresponding muscles of less active species. "Natural training" therefore also leads to an increase in muscle Cr. R. Levine



*Okhrimenko I. P.*

1 Biochemistry of the mammary glands. I. Chemical composition of the cow mammary gland. I. P. Okhrimenko, A. G. Iura, Zhukovskiy. *Ukrain. Biochem. Zh.* 11, 15-21 (1957) (in Russian) (1959) -Compn varies with the different states. During lactation total P, acid-sol. P, total P, and readily hydrolyzable P of the mammary gland increase, as well as total phosphatides. Creatine and non-protein N also increase. Clayton F. Holoway

OKHRIMENKO, I.P.

Biochemistry of the mammary gland. Part 2. Activity of mammary gland enzymes in blood. Ukr.biokhim.zhur. 22 no.2:205-214 '50. (MLRA 9:9)

1. Kafedra tvarinnitstva Zhitomirs'kogo sel'skogospodars'kogo institutu.

(ENZYMES) (MAMMARY GLANDS)

OKHRIMENKO, I.P.

Effect of fodder alkalinity on the calcium and phosphorus content  
of milch cow blood. Ukr.biokhim.zhur. 31 no.6:889-897 '59.  
(MIRA 13:5)

1. Zhitomir Agricultural Institute.  
(COWS) (BLOOD--ANALYSIS AND CHEMISTRY) (CALCIUM IN THE BODY)  
(PHOSPHORUS IN THE BODY)

30

The influence of low temperatures upon the stress-strain curves of mixtures containing Thiolal and Dujene. I. S. Otkrimenko. *J. Rubber Ind.* (U. S. S. R.) 12, 321-9 (1957). Tables and graphs are given of stress-strain curves at room temp.,  $-30^{\circ}$  and  $-50^{\circ}$  of various mixts. of Thiolal (I) and of Dujene (II) with natural rubber. The mixts. of I with II are oil-proof, G.I.-proof and cold-proof. For  $-30^{\circ}$  the mixt. contd. 75% II of the amt. of I; for  $-50^{\circ}$  100% of I. Mixts. of I with natural rubber are less stable. The I mixts. upon freezing lose their elasticity and then resemble cryst. substances.

A. Preston

550 563 INTERNATIONAL LITERATURE CLASSIFICATION



90

C#

The reinforcing effect of white soot GIPKha in native natural and synthetic rubbers. I. S. Dzhuravko and A. A. Antonova (Leningrad Tech. Inst.). *Trudy Leningrad. Tekhn. Inst.* 1946, 181-185.

White soot (I) (colloidal silica) prepared by the method designated GIPKha (now described) is a good reinforcing filler for rubbers. The optimum content of I are 10% in tan-saghyz (II) and 15% in high-saghyz (III) natural rubbers and in steam-heated or deaerated Sanyone synthetic rubber (IV) and 20% in Na-butadiene synthetic rubber (V). Wiegand's energy of electricity, taken from the stress-strain curves, is greater for IV and plastic V when I is used as a filler than when lampblack is used. The energy is the same with either filler for II, III, or free V. The values observed were 320-340 for II, III, or IV, and approx. 120 kg-cm. per cc. for V. I gives stable vulcanizates with all the rubbers as good as those obtained with lampblack, and with IV, even better.

I. S. Dzhuravko

OKHRIMENKO, I.S.; FEOFANOV, A.P.

Method for determining the decomposition temperature of high polymers.  
(MIRA 10:6)

Zav. lab. 23 no.3:333-335 '57.  
(Polymers) (Rubber) (Pyrolysis)

OKHRIMENKO, I.S.  
USSR / Chemistry of High Molecular Compounds.

L.

Abs Jour : Ref. Zhur. - Khimiya, No.2, 1958, 6782.

Author : Setkina, O.N., Okhrimenko, I.S.

Inst : Leningrad Technological Institute.

Title : Determination of Unsaturation in Three-dimensional Polymers of Caoutchouc by means of the Infra-Red Spectrum.

Orig Pub : Leningrad tekhnol. in-ta im. Leningrad 1957, Vol.37, 91-97.

Abstract : The relationship of double bond content in positions 1,2 and 1,4 in caoutchouc (SKB) subjected to thermal treatment was investigated by means of absorption bands at 910 and 970  $\text{cm}^{-1}$ . During the treatment of SKB at 10,000  $\text{kg}/\text{cm}^2$  pressure and 180°C. the relative concentration of -CH=CH- groups gradually decreased from 100 to 28% within a period of 8

Card : 1/2



OKHRIMENKO, I.S.

High-pressure vulcanization of rubber. Kauch, 1 raz. 17 no.3:5-11  
Mr '58. (MIRA 11:6)

1. Leningradskiy tekhnologicheskii institut imeni Lensovska.  
(Vulcanization) (Rubber, Synthetic)

OKHRIMENKO, I.S.; KOBETSKAYA, V.M.; USTINOVA, O.N.; BEREZHNYKH, T.A.

Changes of styrene-butadiene latexes in lacquer coatings. Lakokras.mat.  
i ikh prim. no.4:26-30 '60. (MIRA 13:10)

1. Leningradskiy tekhnologicheskii institut im. Lenooveta.  
(Paint materials) (Butadiene) (Latex)

OKHRIMENKO, I.S.; SHIBALOVICH, V.S.

Study of the styrene-butadiene-methylvinylpyridine copolymer as a film-forming material in water-emulsion paints. Lokokras.mat.i ikh prim. no.5:8-11 '60. (MIRA 13:11)

1. Leningradskiy tekhnologicheskii institut imeni Lensovrsta.  
(Paint) (Polymers)

S/138/60/000/007/008/010

A051/A029

AUTHORS: Okhrimenko, I.S.; Belen'kiy, I.A.; Potapenko, M.N.; Veynberg, I.A.

TITLE: A Study of the Internal Pressures During the Molding and Vulcanization Processes of Rubber

PERIODICAL: Kauchuk i Rezina, 1960, No. 7, pp. 39 - 44

TEXT: A study of the "internal pressure" produced within the mold during the heating and vulcanization of rubber is of the greatest interest, since it is one of the main factors in securing monolithic products in the manufacturing of molded rubber articles. It is also important for determining the right amount of rubber mixture consumed in the process and for the rational utilization of energy in the plants. The range of pressures used in rubber manufacturing is from 12 kg/cm<sup>2</sup> to 600 kg/cm<sup>2</sup>. In the thermal processing of rubber and rubber mixtures volumetric changes take place at a constant external pressure and a change takes place in the "internal" pressures at a constant volume of the polymer. The Leningrad "Skorokhod" Plant was first to use the instrument shown diagrammatically in Figure 1 for the determination of volumetric change in rubber during vulcanization. An- ✓

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S/138/60/000/007/008/010  
A051/A029

# A Study of the Internal Pressures During the Molding and Vulcanization Processes of Rubber.

other instrument of the Poisson type was developed for the measurements of internal pressures (Fig. 3). A further description of the instrument and the method used for the experiments is given. The internal pressure was calculated by the formula:

$$P_{int.} = \frac{K_{con.} - (P_{start.} + \Delta P)}{S_r} \cdot S_p,$$

since the principle of the instrument is based on the compensation of the internal pressure of the rubber by means of a pressing unit.  $K_{con.}$  is the pressure after the heating of the rubber,  $P_{start.}$  is the starting pressure 5 kg/cm<sup>2</sup>,  $\Delta P$  the correction of the thermal expansion of the instrument parts and the press,  $S_r$  - the area of the cross-section of the rubber sample (usually 4.52 cm<sup>2</sup>),  $S_p$  - the area of the cross-section of the press plunger (254.34 cm<sup>2</sup>). The change in the volume of the rubber mixtures during the heating and vulcanizing process, as well as the change in the internal pressure during those processes are further discussed. The conditions for reducing the amount of vulcanized rubber waste were sought and it is stated that these might be accomplished by the use of a sealed mold of the

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S/138/60/009/007/008/010  
A051/A029

A Study of the Internal Pressures During the Molding and Vulcanization Processes of Rubber

Poisson type in the rolling process. It was found that the amount of rubber waste depended on the type of mold used, the weight of the raw material, calibre, etc. The internal pressure of rubbers, vulcanized in the hermetically-sealed Poisson-type molds reaches high values and exceeds the external pressures used in industry by 10 to 20 times. Due to the fact that the internal pressure in these molds is always greater than the external pressure, a qualitative molding and vulcanization of the rubbers can be accomplished, the excess usage of rubber from raw semi-finished articles can be brought to a minimum, as well as that of the vulcanized waste products, and it can also eliminate certain types of waste products. In this case light-weight and low-energy equipment can be utilized. An external pressure of 10 - 12 kg/cm<sup>2</sup> is sufficient for the initial molding of the rubber article, which determines the necessary power of the equipment. The subsequent molding would be ensured by the constant presence of the internal pressure, which is greater than the external one during the vulcanization of the rubber. The amount of the rubber in the hermetically-sealed mold remains constant, and the volume changes slightly according to the temperature and pressure. It is emphasized that the findings of

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S/138/60/000/007/008/010  
A051/A029

A Study of the Internal Pressures During the Molding and Vulcanization Processes of Rubber

these tests render the use of heavy equipment and high pressures unnecessary, in addition to serving as a basis for the vulcanization of rubber products in closed molds outside the vulcanization process. The use of hermetically-sealed Poisson-type molds for general use in the manufacturing of molded rubber articles is recommended. There are 4 diagrams, 6 graphs, 2 tables and 5 Soviet references. ✓

ASSOCIATION: Leningradskiy Tekhnologicheskii institut im. Lensoveta i Leningradskaya fabrika "Skorokhod" (Leningrad Technology Institute im. Lensovet and the Leningrad Plant "Skorokhod")

Card 4/4

S/081/61/000/020/020/089  
B101/B147

AUTHORS: Yefremov, I. P., Okhrimenko, I. S., Basenko, M. A.  
TITLE: Sedimentation of polymer suspensions  
PERIODICAL: Referativnyy zhurnal. Khimiya, no. 20, 1961, 79, abstract  
20B599 (Tr. Leningr. tekhnol. in-ta im. Lenooveta, no. 61,  
1960, 132 - 135)

TEXT: The causes of the different volumes of sediments of polymer suspensions in various liquids were examined. For this purpose, the sedimentation volumes of spherical particles of polymers (polychlorovinyl, fluoroplast-3, polyethylene, and  $\alpha$ -polyoxymethylene) which do not aggregate during sedimentation, were measured in air (volume weight), water, toluene, xylene, and cellosolve. The different volumes of sediments were found to be due to the molecular component of the disjoining pressure of the layers of the liquid between the polymer particles. The disjoining pressure is directly dependent on the energy of interaction between the dispersing medium and the surfaces of particles of the disperse phase.

[Abstracter's note: Complete translation.]

Card 1/1



OKHRIMENKO, I.S., BILEN'KIY, I.A., POTAPENKO, M.M., VEYNBERG, I.A.

Study of internal pressures in the process of molding and vulcanization of rubbers. Kauch.i rez. 19 no.7:39-44 J1 '60.

(MIRA 13:7)

1. Leningradskiy tekhnologicheskii institut im. Lensovetu i Leningradskaya fabrika "Skorokhod".

(Vulcanization)

YEFREMOV, I.P.; OKHRIMENKO, I.S.; BASENKO, M.A.

Sedimentation of polymer suspensions. Trudy LTI no.61:132-  
135 '60. (MIRA 15:5)  
(Polymers) (Particle size determination)

15.8000 2209, 1581.

11.2210

22565

S/190/61/003/005/008/014  
B110/B230

AUTHORS: Okhrimenko, I. S., Petrov, A. A., Verkholantsev, V. V.

TITLE: Mechanism of the formation and reversibility of trimers containing pyridine rings. I. Mechanism of trimer conversion

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 5, 1961, 724-728

TEXT: Trimerization yields insoluble and non-melting products of high strength. The present authors intended to examine the trimerization mechanism of copolymers containing pyridine ring, as well as the possibility of their reversible conversion to form linear polymers. A reversibility has already been observed in the acid treatment of trimers containing azomethine group in the side chain, obtained by polymerization of Schiff's bases with vinyl group, as well as in KOH vulcanization <70°C of carboxylate rubber. The authors examined the conversion of linear polymers into the trimer with the help of the latex copolymer CKMBT-40 (SKMVP-40) of 2-methyl-5-vinyl pyridine with 60% by weight of divinyl and 72% conversion. After treatment with strong acids it was not soluble either in polar (chloroform) or in non-polar (benzene) solvents. Its

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S/190/61/003/005/008/014  
B110/B230

Mechanism of the formation...

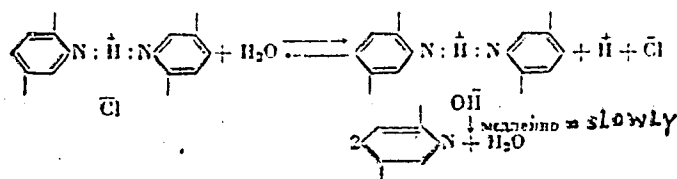
strength increased to 500 - 600 kg/cm<sup>2</sup>. Infrared spectra have shown that no cross linking was effected by double bonds. Spectroscopic data have also allowed to deduce the occurrence of reactions on the pyridine ring. Weak alkalis and boiling salt solutions made the copolymers, while reducing their strength, almost entirely soluble in benzene etc. Strong organic and mineral acids ( $K_1 = 6.65 \cdot 10^{-5}$  to  $1.04 \cdot 10^{-3}$ ) (Table 1) caused trimerization. As also monobasic acids cause trimerization, conversion cannot be explained by intermolecular formation of salts alone. In the infrared spectrum, no absorption due to fluctuations of the valence of the NH group could be observed within the range of 3000 to 3500 cm<sup>-1</sup>. At 2400 cm<sup>-1</sup> a new wide band due to hydrogen bonding appeared, the intensity of which increased with the strength of the added acid (Fig. 1). The sequence of the acid quantities absorbed was reverse to that of the strength of the acids: HCl = 69%; HNO<sub>3</sub> = 74%; H<sub>3</sub>PO<sub>4</sub> = 139% of the theoretical quantity. On immersion in water the acid absorbed was entirely removed again, and the trimer content somewhat decreased (Fig. 3).

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Mechanism of the formation...

S/190, 01/000, 000, 000, 000  
B110/B230

Fig. 4 shows the swelling of specimens in benzene, which were exposed to 1 M acid for 2 hr and rinsed with water. Supposing the swelling degree to be inversely proportional to the density of cross links, the strongest acid, HCl, binds best. The rate of gel formation was very high and, within a certain range, almost independent of the thickness of the film. From this, a high rate of diffusion of the cross-linking agent (proton) could be deduced. The polymer film absorbed more protons than anions from the acid. The protons could be removed again only by boiling in the presence of nucleophile reactants. The following equilibrium is possibly present:



With a rise of temperature also the oscillating energy of the chains increased, which could not be compensated any more by the strength of intermolecular cross links. Therefore, the trimer content decreased and the

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22565

S/190/61/003/005/008, 014  
B110/B230

Mechanism of the formation...

absorption of acid increased. The following intermolecular binding mechanism is assumed herefrom: First, the acid formed salts with the pyridine ring, then a stable hydrogen bond by means of protons bound in a similar way to two-nitrogen atoms. Stable ions resembling  $HF_2^-$  are formed thereby. In addition, dibasic acids may also yield salt bonds. To eliminate the influence of diffusion, reactions of the copolymer CKMBN-40 (SKMVP-40) were examined on films of  $>200\mu$  thickness. The trimer content was determined by extraction in benzene in the Soxhlet device. The infrared spectra were taken by means of the spectrophotometer MKC-14 (IKS-14). The acid absorption was determined by titration of the acid bath before and after the treatment and by weighing the dry sample. The authors thank E. K. Dazaryants and V. L. Tsaylingol'd for the latex. There are 5 figures, 1 table, and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Leningradskiy tekhnologicheskii institut im. Lensovet  
(Leningrad Technological Institute im. Lensovet)

SUBMITTED: July 22, 1960

Card 4/7

OKHRIMENKO, I.S.; VASIL'YEVA, T.P.

Utilization of products of the thermal oxidative degradation of  
styrol-butadiene copolymers as film-forming materials. Lakokras.  
mat. i ikh prim. no.5:31-34 '61. (MIRA 15:3)

1. Leningradskiy tekhnologicheskij institut imeni Lensovea.  
(Polymers) (Styrene) (Butadiene)

27067  
S/080/61/034/003/007/017  
A057/A129

15.7140

AUTHORS: Andreyev, D. N., Okhrimenko, I. S., Pinchuk, A. Ye., Lyutyy, V. P.

TITLE: Unsaturated organosilicon polyesters and the properties of lacquers on this base

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 3, 1961, 584 - 588

TEXT: Syntheses of two new polyfumarates, modified with siloxane links, viz., the diester bis(trimethylsilylmethyl)fumarate and the polyester poly(dimethylene-tetramethyldisiloxane)fumarate are described and preliminary results in investigations of their properties are given. Polymaleates and polyfumarates are widely used in the manufacture of lacquers, plastics etc. M. A. Bulatov and S. S. Spasskiy [Ref. 1; Vysokomol. soyed., 2, 5, 658 (1960)] demonstrated already that these esters, when modified with organosiloxanes, as for instance with dimethyldiethoxysilane, obtain high technical properties. Organosiloxane polymaleates and polyfumarates, derivatives of organosiloxane and glycols containing a siloxane link in the molecule, have not been synthesized. Thus the present authors started investigations in this field. To develop the synthesis of the polyester, the synthesis of the diester was carried out first according to the reaction  $2(\text{CH}_3)_3\text{SiCH}_2\text{Cl} +$

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27067  
S/080/61/034/003/007/017  
A057/A129

Unsaturated organosilicon polyesters and the...

+  $\text{KOOCCH=CHCOOK} \rightarrow (\text{CH}_3)_3\text{SiCH}_2\text{OOCCH=CHCOOCH}_2\text{Si}(\text{CH}_3)_3$ . In the procedure 0.16 mole of potassium fumarate was mixed with 0.08 mole of fumaric acid in 150 ml of dimethylformamide as solvent. The mixture was boiled, agitated during 30 minutes, dropwise 0.32 mole chloromethyltrimethylsilane was added, heated, agitated for 20 hrs more. while the boiling temperature rose from 124°C to 149°C. After cooling the precipitated potassium chloride was filtered off, the solvent was removed by vacuum distillation and the residue was treated with a soda solution and water-benzene mixture. Then the benzene was dried, evaporated and the fumarate was vacuum-distilled (151°-153°C, 8 torr). The yield was 54.8% of a product with  $n_D^{20}$  1.4548,  $d_4^{20}$  0.9805. In an analogous way the polyester was prepared. Potassium fumarate of 0.5 mole was mixed with 0.125 mole of fumaric acid in 300 ml of dimethylformamide and then bis(chloromethyl)tetramethyldisiloxane was added. Instead of benzene ether was used as solvent and after removal of the latter a highly viscous reddish-brown substance insoluble in water but soluble in most organic solvents, except petroleum ether and gasoline, was obtained. The average molecular weight was found to be 2,400 corresponding to a condensation degree of 9. The re-precipitated polyester was investigated by spectrophotometry on an MKC-12 (IKS-12) apparatus. The obtained infrared absorption spectrum proved the presence of double bonds in the trans-

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27067  
3/080/61/034/003/007/017  
A057/A129

Unsaturated organosilicon polyesters and the...

position ( $900 - 990 \text{ cm}^{-1}$ ,  $1,320 \text{ cm}^{-1}$ ), siloxane bonds ( $1,020 - 1,091 \text{ cm}^{-1}$ ),  $(\text{CH}_3)_2\text{Si}$  groups ( $800 - 814 \text{ cm}^{-1}$ , and  $1,259 \text{ cm}^{-1}$ ), ester groups characteristic for fumarates ( $1,140 - 1,180 \text{ cm}^{-1}$ ) and end-carboxylic groups ( $900 - 950 \text{ cm}^{-1}$ ). The obtained polyester is miscible with styrene within a range from 3.5 : 1 to 0.3 : 1, and transparent homogeneous solutions are obtained. Properties of four lacquers (see table) based on this polyester were investigated and it was observed that in comparison with maleic resins the double bonds in siloxane-modified fumaric resin show lower activity. Thus a lacquer based on this resin required heating to  $200^\circ\text{C}$  to "dry" within 30 minutes, i.e., to produce a three-dimensional structuration to 70% (Fig. 3). At  $120^\circ\text{C}$  the same degree of structuration requires 7 hrs (Fig. 2). The drying is the result of two independent processes: 1) a catalytic polymerization with an initiator (1% of cyclohexanone peroxide), and 2) an oxidative structuration produced by heating over  $100^\circ\text{C}$ . No initiator seems to be necessary for the latter process. Elasticity tests carried out by the NIILK method and hardness tests on a ГИЛИ-4 (GIPI-4) machine showed that films obtained from these lacquers have high elasticity, but rather low hardness. Thus lacquer no. III showed after 70 minutes of drying at  $200^\circ\text{C}$  a 1 mm flexibility on a rod and a 0.195 hardness. There are 3 figures, 1 table, and 2 Soviet-bloc references.

SUBMITTED: July 9, 1960

Card 3/5

OKHRIMENKO, I.S.; YAKOVLEV, A.D.

Economizing solvents in the manufacture of paint materials.  
Lakokras.mat.1 ikh prim. no.1:33-36 '62. (MIRA 15:4)

1. Leningradskiy tekhnologicheskij institut im. Lensoveta.  
(Paint materials) (Solvents)

OKHRIMENKO, I.S.; KOLIN, V.I.

Use of the PMT-3 instrument for hardness evaluation and study of  
the hardening process in lacquer coating. Lakokras.mat.i ikh  
prim. no.2:48-52 '62. (MIRA 15:5)

1. Leningradskiy tekhnologicheskii institut imeni Lenooveta.  
(Protective coatings---Testing) (Measuring instruments)

Z/011/62/019/010/001/009  
E112/E435

AUTHORS: Myshlennikova, V.A., Li-Izey-Sya, Okhrimenko, I.S.

TITLE: Preparation of organo-dispersed resin solutions,  
based on high-molecular polyoxymethylene

PERIODICAL: Chemie a chemická technologia. Přehled technické a  
hospodářské literatury, v.19, no.10, 1962, 464,  
abstract Ch 62-6268 (Lakokras. Materialy, no.3, 1962,  
12-14)

TEXT: Polyoxymethylene or polyformaldehyde is an excellent raw  
material for the production of paints and lacquers. Its melting  
point is 173 to 175°C and it is highly crystalline. The polymer  
is, under normal conditions, insoluble in the conventional  
solvents. It only swells slightly in dibutylphthalate, pyridine  
and chlorophenol. It shows good swelling in cyclic hydrocarbons  
and an even better swelling in phenols. In some solvents  
formation of gels takes place at elevated temperatures. In the  
preparation of the dispersed organosols, which are to be converted  
later onto films by means of heating, the dispersing agent is an  
important component. Dibutylphthalate and pine oil proved to be  
Card 1/2

Preparation of organo-dispersed ...

Z/011/62/019/010/001/009  
E112/E435

best; they are added in the proportion of 1:1. The dispersion is carried out in a ball mill or comminutor. After application, the surface coat must be heated for 10 to 15 minutes at 200°C. It is resistant to water, solvents bending and impact. Ageing for 400 hours at 80°C did not produce any change. 1 sketch, 2 diagrams, 1 table, 18 literature references. ✓

[Abstracter's note: Complete translation.]

Card 2/2

OKHREIMENKO, I.S.; YAKOVLEVA, A.D.; KUZNETSOVA, K.B.; Prinsipali  
uchastnye: YEREMENKO, O.N.; GORONOVICH, Z.P.; ZBORZHIL, L.S.

Paint mixes and coatings based on sulfochlorinated polyethy-  
lene. Lakokras.mat. i ikh prim. no. 4125-30 '62. (MIRA 16:11)

S/276/63/000/002/029/052  
A052/A126

AUTHORS: Okhrimenko, I. I., Yakovlev, A. D., and Kuznetsova, A. D.  
TITLE: Paint compositions and coatings on chlorosulfurized polyethylene base  
PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, 1963, No. 1, At 196, 1963, Tekhn. materialy i ikh primeneniye, no. 1, 1963, 28-30  
TEXT: The results of investigations of paint compositions and coatings on chlorosulfurized polyethylene base containing 26.5-27.6% Cl and 1.7-2.5% S are reported. It is shown that a chlorosulfurized polyethylene base paint compositions of solution and organodispersion types can be produced. It is advisable to use chlorosulfurized polyethylene in compositions in combination with other resins, whereby glycerin ester of phony (it can be added to up to 5% of film-former weight) has a leveling effect. In view of the acidity of chlorosulfurized polyethylene it is recommended to add to compositions based on it inert pigments, titanium dioxide and others; as structural additions it is advisable to use...

Card 1/2



Paint compositions and coatings...

S/276/63/000/001/001/001  
A052/A120

nylguanidine and some metal oxides in the presence of which the film-former passes into an insoluble state without heating. It is pointed out that coatings on chlorosulfurized polyethylene base have a low steam permeability, corrosion resistance in water, acids (nitric, sulfuric) and other chemical substances, as well as when used in the atmosphere and under conditions of natural and artificial ageing. On account of their properties these coatings can be recommended for protecting the equipment of chemical and other industries.

(Abstracter's note: Complete translation.)

Card 2/2

h1118

S/190/62/004/010/002/010  
B101/B186

AUTHORS:

Verkholantsev, V. V., Okhrimenko, I. S.

TITLE:

Mechanism of the formation and reversion of three-dimensional polymers containing pyridine rings. II. Conversion of the three-dimensional polymer into a linear polymer

PERIODICAL:

Vysokomolekulyarnyye soyedineniya, v. 4, no. 10, 1962, 1463-1468

TEXT: Previous papers (Vysokomolek. soyed., 3, 724, 1961) show that the action of an acid causes the formation of hydrogen bonds between the molecules of CXMBN-40 (SKMVP-40) copolymer, consisting of 40 parts by weight of 2-methyl-5-vinyl pyridine and 60 parts by weight of divinyl. A three-dimensional polymer with the structure

-CH-

$$\left[ (\text{CH}_3)_2\text{C}_6\text{H}_3\text{N}^+ \text{H} : \text{N}^-\text{C}_6\text{H}_3(\text{CH}_3) \right] \text{OH}^-$$

-CH-

forms by cross linking. The conditions

Card 1/3

S/190/62/004/010/CC2/010  
B101/B186

Mechanism of the formation , , ,

causing reversion of the three-dimensional polymer into a linear polymer were studied. The intermolecular bonds broke under the action of water, aqueous or alcoholic KOH of SKMVP-40 films which had first been structurized by means of an acid. The content of soluble linear polymer was determined by extraction with benzene. At room temperature, alkali did not affect the three-dimensional polymer, at 80-100°C, the spatial structure was partly destroyed by H<sub>2</sub>O and more intensively by aqueous KOH, whereas alkaline KOH brought about complete conversion into a linear polymer. Solvents causing greater polymer swelling than H<sub>2</sub>O accelerated the nucleophilic cleavage. SKMVP-40 samples structurized by 0.1 N HCl were reversed more readily than those treated with 0.7 N or 2.47 N HCl. H<sub>2</sub>SO<sub>4</sub> and H<sub>3</sub>PO<sub>4</sub> had a similar effect. The density of cross links depended on the acid concentration. Conclusions: Treatment of SKMVP-40 with acids causes cross linkage and also the formation, dissolution, and hydrolysis of salts. Besides H-bond complexes, there also exist pyridinium ions coordinated with acid anions or OH groups, and free pyridine rings. Weak acids cause salt formation:  $\geq N-H \dots anion$  without structurization. Strong acids cause structurization owing to H bonds:

Card 2/3

Mechanism of the formation ...

S/190/62/004/010/002/010  
B101/B186

$\geq N...H$  anion. Strong, polybasic acids also form salt bonds, weak polybasic acids yield intermolecular salt bonds. Intermolecular H bonds form at a certain critical acid concentration. Increasing acid concentration causes the formation of  $PyCl$  and finally also its hydrolysis. Increased concentration of free pyridine rings, however, shifts the equilibrium toward the formation of H cross links, and swelling decreases again. Rupture of H-bonds by  $KOH$  is due to the steric complex bound to  $Cl^-$  later becoming  $OH^-$  as a result of  $KCl$  formation. With an excess of  $OH^-$ , this complex decomposes into  $2(CH_3)_6H_3N + H_2O$ . Besides an

-CH-

excess of  $OH$  groups, the nucleophilic agent has to reach the proton of the H bond, which is helped by swelling. There are 2 figures and 2 tables. The English-language reference is: D. O. Jordan, T. Kurucsev, Polymer, 1, 202, 1960.

ASSOCIATION: Leningradskiy tekhnologicheskii institut im. Lensovet  
(Leningrad Technological Institute imeni Lensovet)

SUBMITTED: May 29, 1964<sup>t</sup>  
Card 3/3

VERKHOLANTSEV, V.V.; OXHRIMENKO, I.S.

Characteristics of the changes in the strength of pyridene-containing  
copolymers. Kauch. i rez. 21 no.11:1-3 N '62. (MIRA 15:12)

1. Leningradskiy tekhnologicheskii institut imeni  
Leninsovetu.

(Rubber, Synthetic)  
(Pyridene)

YAKOVLEV, A.D.; KOSHELEVA, N.V.; OKNEBENKO, I.S.

Obtaining organic dispersions and coatings on the base of acrylonitrile-butylacrylate copolymers. Lakokras. mat. i ikh prim. no.3:3-5 '63.  
(MIRA 16:9)

1. Leningradskiy tekhnologicheskii institut im. Lensovetu.  
(Protective coatings) (Acrylonitrile polymers)

YAKOVLEV, A.D.; KOSHELEVA, N.V.; OKHRIMENKO, I.S.

Protective coatings with a base of organic dispersions of  
polyacrylonitrile. Lakokras. mat. i ikh prim. no. 4:18-22 '63.  
(MIRA 16:10)

1. Leningradskiy tekhnologicheskii institut imeni Lensoveta.

MYSHLENNIKOVA, V.A.; SERGEYEVA, L.A.; OKHRIMENKO, I.S.

Production and some properties of organodispersions of a fluorine-containing copolymer. Izv.vys.ucheb.zav.;khim.i khim.tekh. 6 no.1;128-132 '63. (MIRA 16:6)

1. Leningradskiy tekhnologicheskii institut imeni Lensovet  
kafedra tekhnologii lakov, krasok i nemetallicheskiikh pokrytiy  
i kafedra organicheskoy khimii.  
(Polymers) (Fluorine compounds) (Dispersion)





L 10297-65

ACCESSION NR: AP4047677

yellow improved only the anti-rust property. Coatings pigmented with iron (in contrast to chrome yellow) also have a high impact strength (10 kg/cm<sup>2</sup>) good elasticity (1 mm). For comparison, the physico-mechanical properties of coatings made with a mixture of pigments (No. 138) also plotted and properties such as hardness, bending strength, impact, adhesion, vapor permeability, elongation, water repellency and resistance to alkali and moisture are tabulated. The best properties were obtained with containing 15-20 vol. % of the mixture of pigments also contained in the base coating. As compared to the standard anticorrosive coatings (No. 100 GF-020), the new type of coating gives no rise to difficulties in the technological process and makes it possible to save 100 g of vegetable oil for 1 ton of product. The new oil-free coating is in no way inferior to the standard oil-containing coating No. 138 (at the same amount of fillers) and surpasses it in adhesive, anticorrosive and other properties. Orig. art. has: 1 table and 3 figures.

ASSOCIATION: None

SUBMITTED: 00

NO REF SOV: 005

Card 2/2

ENCL: 1  
OTHER: 1

SUB CODE: M

ACCESSION NR: AP4041456

S/0138/64/000/006/0005/0009

AUTHOR: Verkholantsev, V. V.; Okhrimenko, I. S.

TITLE: Plasticizing of pyridine-containing copolymers by mineral acids

SOURCE: Kauchuk i rezina, no. 6, 1964, 5-9.

TOPIC TAGS: pyridine, copolymers, mineral acids, plasticizer, SKS-70MVP-10 copolymer, butadiene, styrene, 2-methyl-5-vinyl-pyridine, elastomer

ABSTRACT: The authors investigated the physico-mechanical and thermomechanical characteristics (hardness, rupture strength, relative elongation, yield point), of films from mixtures of copolymer SKS-70MVP-10 (copolymer of butadiene, styrene and 2-methyl-5-vinyl-pyridine (20:70:10)) with hydrochloric acid, orthophosphoric acid and polymethacrylic acid. The results show that mineral acids can act as either hardening or plasticizing agents, depending on the amount in the polymer. Thus, for example, 5-7% HCl or  $H_3PO_4$  have a plasticizing effect, while 13-15% of the same acids cause hardening, and even greater concentrations again decrease the strength of the films. In contrast, however, polymethacrylic acid, which forms an irreversible space lattice with the copolymer

Corä 1/2

ACCESSION NR: AP4041456

is a hardening agent at any concentration. In the presence of appropriate concentrations of the low-molecular-weight plasticizer dibutylphthalate, the hardened space lattice of the copolymer and 13-15% mineral acid is destroyed. In this process, a certain stoichiometric relationship can be observed (maximal plasticity at 18% dibutylphthalate, or 1 mol per 4 mols HCl). By considering the ratio between the polar and nonpolar portions of the pyridine-containing copolymer, as well as the amount of mineral acid added to the polymer mixture, it can be predicted whether the given mixture will be hardened or plasticized. Orig. art. has: 5 figures and 2 structural formulas.

ASSOCIATION: Leningradskiy tekhnologicheskii institut im. Lensovet (Leningrad Engineering Institute)

SUBMITTED: 00

SUB CODE: OC, MT

DATE: 17.11.64

NO REF SOV: 007

ENCL: 00

OTHER: 002

Card 2/2

13946-65 EST(m)/EWP(j) Pc-4 RM  
AC/USION NR: AP4047209

B/0190/64/006/010/1821/1824

AUTHOR: Bayera, G. I.; Bondarev, G. N.; Chelpanova, L. F.; Ochrinenko, ...

TITLE: Modification of polyamide resin with unsaturated aldehydes

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 10, 1964, 1821-1824

TOPIC TAGS: polyamide resin, resin modification, unsaturated aldehyde, acrolein, crotonaldehyde, polymer viscosity, polymer molecular weight

ABSTRACT: The authors investigated the activity of acrolein, crotonaldehyde, methypropynal, tertiary-butyl-propynal and phenylpropynal in the modification of polyamide resin 548. To a 10% solution of the resin in 80% ethyl alcohol, the authors added a 68% solution of phosphoric acid (2% by weight of the resin). The aldehydes were then added gradually during 30-40 min. at 50C, with constant stirring continued for 10 hrs. The polymer was finally precipitated with a water mixture (1:2) from a solution neutralized by ammonia, and the degree of saturation in the modified resin was determined by the method of Kaufman. The results showed that the degree of substitution of the amide hydrogen under these conditions, as determined by iodine number and elemental analysis, is independent of the aldehyde structure and lies within the limits of 0-10%. From the data

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L 33946-65

ACCESSION NR: AP4047209

metric titration curves, it can be concluded that modification by aldehydes is associated with changes in molecular weight distribution, which is in agreement with the results obtained by viscosity measurements. Orig. art. has: 1 formula, 2 figures and 1 table.

ASSOCIATION: Leningradskiy tekhnologicheskii institut im. Lensovetu (Leningrad technological institute)

SUBMITTED: 09Dec63

ENCL: 00

SUB CODE: 05

NO REF SOV: 004

OTHER: 004

Card 2/2



L 33947-65

ACCESSION NR: AP4047219

dependent on the degree of hydration. It was also established that the formation of water-insoluble products of PMAA with PVA proceeds in two stages: the first involves the formation of reversible and irreversible products as a result of hydrogen bonding between functional groups, and the second involves ester bond formation. Orig. art. has: 4 tables and 1 figure.

ASSOCIATION: Leningradskiy tekhnologicheskii institut im. Lens veta (Leningrad technologic. i instituta)

SUBMITTED: 25Dec63

ENCL: 00

SUB CODE: 00

NO REF SOV: 002

OTHER: 003

Card 2/2



L 16322-65 EWT(m)/EPF(c)/EPR/FWP(j)/T

Pc-4/Pr-4/Ps-4 WW/RM

ACCESSION NR: AF4-49158

8/0190/64/006/011/2063/2067

AUTHOR: Verkholantsev, V. V.; Okhrimenko, I. S.; Yefremov, I. P.

TITLE: Viscosity of nonaqueous solutions of a pyridine-containing copolymer

SOURCE: Vy'sokomolekulyarnyye soyedineniya, v. 6, no. 11, 1964, 2063-2067

TOPIC TAGS: methylvinylpyridine, copolymer neutralization, copolymer viscosity, solvent/copolymer SKMVP-40

ABSTRACT: The authors studied the variation in the viscosity of nonaqueous solutions of copolymer SKMVP-40 under the influence of HCl. The copolymer was obtained in the form of free films by drying the latex, then carefully washed to remove the impurities; low-molecular fractions were removed by boiling in water and then in acetone. For neutralization, 0.09-16.88N chemically pure HCl was used. The copolymer contained 43.57% by weight of 2-methyl-5-vinyl-pyridine. The degree of neutralization ( $\alpha$ ) was calculated from the experimental data. The variation in the Hoppler viscosity of the SKMVP solution in a propanol: cyclohexane mixture (1:1) diluted with isobutanol was plotted against the degree of HCl neutralization, showing that neutralization first increases and then decreases the viscosity. The maximum coefficient of internal friction ( $\eta_{max}$ ) falls in the range of 0.8-0.9, while dilution causes the  $\alpha_{crit}$  to shift toward lower values. The maximum

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L 16322-65

ACCESSION NR: AP4042108

viscosity occurs at low values of  $\alpha$ . The  $\alpha$  value also varies with time. Since the solution of a gel, this is associated with the distribution of HCl between the groups along the copolymer chain, as well as between the polymer and solvent. Studies of more dilute solutions showed that the position of  $\alpha_{crit}$  depends on both the composition of the copolymer in the solution and the HCl concentration. This shows that the introduction together with the acid also affects the viscosity. The critical  $\alpha$  values for neutralization of SKMVP-42 in butanol solution by 0.09N HCl in the presence of additives (such as acetone, dioxane and tetrahydrofuran) are tabulated. Benzene and butyl alcohol affect the  $\alpha$  value slightly. It was found that the solutions are characterized by a maximum viscosity at a degree of neutralization somewhat higher than the half-equivalent point. The maximum viscosity is affected by the concentration of the solution in the presence of polar additives. At a degree of neutralization of 0.65, a minimum viscosity was found. The presence of proton-acceptor additives increases the reduced viscosity value. The viscosity maximum shifts toward the equivalent neutralization point. The effects observed are explained by the partial ionization and solvation of the polymeric pyridine salt, the formation of reversible intermolecular hydrogen bonds as well as of solvate bridges, and the participation of the polar molecules of the solvent. Orig. art. has 1 table and 3 structural formulas.

Card

2/3

L 16322-65

ACCESSION NR: AP4049158

ASSOCIATION: Leningradskiy tekhnologicheskoy institut im. Lensovet (Leningrad  
Engineering Institute)

SUBMITTED: 23Jan64

ENC1: 00

SUB CODE: 00

NO REF SOV: 006

OTHER: 004

Card 3/3

ROZHKOV, Yu.P.; OKHRIMENKO, I.S.

Surface tension of plasticized ethyl cellulose melts. Koll. zhur.  
26 no.5:608-612 S-O '64. (MIRA 17:10,

1. Leningradskiy tekhnologicheskii institut imeni Lensoвета,  
kafedra tekhnologii lakov, krasok i nemetallicheskikh pokrytiy.